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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,363	03/17/2004	Jingyu Lian	2004P51100US/INTECH 3.0-0	5822
48154	7590	12/29/2005	EXAMINER TRAN, THANH Y	
SLATER & MATSIL LLP 17950 PRESTON ROAD SUITE 1000 DALLAS, TX 75252			ART UNIT 2822	
PAPER NUMBER				

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/803,363

Applicant(s)

JINGYO LIAN

Examiner

Thanh Y. Tran

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 16, 17 and 21-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

References Cited (PTO-892)

Draftsperson's Patent Drawing Review (PTO-948)

Disclosure Statement(s) (PTO-1449 or PTO/SB/08)

(Mail Date 9/30/05 & 10/7/05.)4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)6) ☐ Other: _____.

Office

DETAILED ACTION

This application contains claims 16-17 and 21-28 drawn to an invention nonelected with traverse filed on 6/7/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashida (U.S. 6,365,420) in view of Marsh et al (U.S. 6,800,937).

As to claim 1, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, the method comprising: depositing an adhesion layer (31) on a SiO₂ substrate (30) (see col. 6, lines 62-65); and depositing a noble metal bottom electrode ("lower electrode" 32) on the adhesion layer (31).

Ashida does not disclose the adhesion layer being selected from the group consisting of at least one of Si, and IrO₂.

Marsh et al discloses in col. 3, lines 46-52 an adhesion layer is selected from the group consisting of IrO₂. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the capacitor structure of Ashida by using

IrO₂ material for an adhesion layer as taught by Marsh et al for preventing delamination of films in a semiconductor structure (see col. 4, lines 44-55 in Marsh).

As to claim 2, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, further comprising: depositing a high-k dielectric material ("high dielectric film" 33) (col. 7, lines 34-36) on the bottom electrode ("lower electrode" 32); depositing a top electrode ("upper electrode" 34) on the high-k dielectric layer ("high dielectric film" 33); patterning the top electrode ("upper electrode" 34) and the high-k dielectric layer ("high dielectric film" 33); depositing an insulation layer ("insulation film" 35) thereon; opening vias ("via holes") (col. 7, lines 12-21) to the top electrode ("upper electrode" 34) in the insulation layer ("insulation film" 35); depositing a metal pad layer ("wiring" 36) (col. 7, lines 22-31) in the vias and atop the insulation layer ("insulation film" 35); and patterning the metal pad layer ("wiring" 36) (col. 7, lines 22-31).

As to claim 3, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, wherein the bottom electrode ("lower electrode" 32) is Pt (see col. 7, line 3).

As to claim 4, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, wherein the top electrode ("upper electrode" 34) is Pt ("platinum") (see col. 7, lines 9-12).

As to claim 5, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, wherein the insulation layer ("insulation film" 35) is SiO₂ ("silicon oxide") (col. 7, lines 14-17).

As to claim 6, Ashida discloses in figure 5 a method of fabricating a high dielectric constant (high-k) capacitor structure, wherein the metal pad layer ("wiring" 36) is Al ("aluminum") (col. 7, lines 22-31).

Response to Arguments

3. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith, can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYT


ZANDRA V. SMITH
PRIMARY EXAMINER
Supervising 27 Dec. 2005